Public Disclosure Document

Fume Bloome

Title: Frequency-Selective Olfactory Emission System for Multisensory and Personal Scent Applications

InventorArtur Nugumanov

Date: 5/15/2025

Abstract:
This disclosure describes a system for delivering precisely controlled aromatic stimuli using ultrasonic frequencies to selectively evaporate target aromatic compounds from a mixed scent solution. The system supports wearable and pocket-size personal devices, smart fragrances, and synchronized large-scale olfactory experiences. It introduces the foundational concept of "Scent Music," where frequencies operate as the functional language of scent, akin to musical notes and chords.

---

1. Personal Olfactory Devices

A) Nosephone (Wearable)

- A compact, wearable device placed beneath or near the nostrils.
- Contains one or more scent capsules with:
    - A single scent mix containing multiple aromatic compounds, each engineered to evaporate under a specific ultrasonic frequency.
    - Or multiple scent cartridges activated by specific piezoelectric emitters.
- A mobile app or onboard UI allows the user to trigger selected ultrasonic frequencies to release desired scent notes.
- Multiple piezos can be activated simultaneously to form "scent chords," though a single wideband piezo can also emit a composite waveform to stimulate multiple frequencies simultaneously.

B) Scent Pocket (Non-Wearable Personal Device)

- A palm-sized, vape-like device.
- Operates identically to the nosephone, but is held up to the nose by hand and used in short aroma bursts (like puffing aroma instead of vapor).
- Designed for casual or ritual use — e.g., scent hits for meditation, creativity, memory, or mood.
- USB-charged, refillable capsule or scent pod system.

C) Frequency-Addressed Capsule Array (Small-Scale Option)

- A micro-scale personal device containing a fixed array of 6–10 scent capsules.
- Each capsule contains a single aroma compound with a unique viscosity, resonance, or chamber design.
- A single wideband piezoelectric transducer emits sweeping or targeted frequencies.
- Only the capsule tuned to the given frequency responds with evaporation, enabling scent selection without mechanical valves or multiple actuators.
- A single piezo can emit **multiple frequency signals simultaneously**, allowing the creation of scent chords by activating several capsules at once.
- Allows mobile-triggered scent switching, extremely compact design, and silent operation — ideal for portable or wearable implementations.

---

2. Smart Fragrance Bottle

- A programmable perfume bottle that uses ultrasonic frequency targeting to emit specific scent molecules from a pre-mixed blend.
- The user selects a mode on the app (e.g., "fresh," "mystical," "evening") and the bottle emits the corresponding aromatic profile.
- Options:
    - **Single blend mode**: one bottle, full scent spectrum; scent selection by frequency.

- **Multi-pod mode**: interchangeable cartridges, each activated separately.

---

3. Immersive Scent Show Systems

- Large-scale ultrasonic diffusion systems integrated into:
  - Cinemas
  - VR headsets
  - Live performances or installations
- Synchronize scent transitions with:
  - Music
  - Dialogue or mood shifts in film
  - VR environments
- Controlled via time-coded ultrasonic frequency emission to deliver precise scent sequences to audiences, potentially adapting in real-time.

---

4. Scent Music as a Framework

Scent Music is the conceptual backbone of the system:

- **Scent Notes**: Single aromatic compounds that respond to distinct frequencies
- **Scent Chords**: Simultaneous activation of 2–3 frequencies to combine scents
- **Scent Melodies**: Time-sequenced frequency shifts to tell a scent story
- **Olfactory Instruments**: Piezo-driven emission units
- **Olfactory Tracks**: Pre-sequenced frequency files (like MIDI for the nose)

Technical Considerations

- **Ultrasonic Frequency Range**: 100 kHz – 2.5 MHz depending on compound density and volatility
- **Chamber Design**: Focused wave zones with thermal and acoustic insulation
- **Carrier Solutions**: PG, VG, ethanol, or water depending on target compound
- **Evaporation Precision**: Controlled by power modulation, resonance tuning, and surface area
- **Capsule Resonance Tuning**: For small-scale arrays, capsules are physically or chemically tuned to respond to specific frequencies, enabling multi-scent control using a single emitter
- **Single Piezo Control**: A single wideband piezoelectric emitter may generate composite waveforms to activate multiple target frequencies simultaneously, eliminating the need for multiple emitters in compact implementations.

Purpose of Disclosure

This document serves as a prior art disclosure of a novel frequency-selective olfactory delivery system capable of real-time, programmable, and emotionally resonant scent output. The system includes wearable and handheld personal devices, smart perfumes, and public-scale synchronized scent systems. It establishes the groundwork for a new category: programmable scent music.

Filed as Public Disclosure to establish prior art.